District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources Department

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	nJXK1624425919
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party: Cimarex Energy Co. of Colorado	OGRID: 162683
Contact Name: Laci Luig	Contact Telephone: (432) 571-7800
Contact email: laci.luig@coterra.com	Incident # *(assigned by OCD)* nJXK1624425919 (formerly RP-4423)
Contact mailing address: 600 N Marienfeld Street, Ste. 600 Midland, TX 79701	

Location of Release Source

Latitude 32.0961418 Longitude -103.5835724

(NAD 83 in decimal degrees to 5 decimal places)

Site Name: Red Hills SWD 001	Site Type: Battery
Date Release Discovered: 8/25/2016	API# *(if applicable)* 30-025-35598

Unit Letter	Section	Township	Range	County
M	28	25S	33E	Lea

Surface Owner: ☐ State ☒ Federal ☐ Tribal ☐ Private (*Name:* _____)

Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☒ Produced Water	Volume Released (bbls) 55	Volume Recovered (bbls) 15
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release: Equipment Failure
A 4" threaded nipple broke off a 4" tee. All fluids were contained within a dirt unlined berm. This is a functioning facility. Samples will be collected for delineation.

Form C-141
Page 2

State of New Mexico
Oil Conservation Division

Incident ID	nJXK1624425919
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? ☒ Yes ☐ No	If YES, for what reason(s) does the responsible party consider this a major release? Total amount of release greater than 25 barrels
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? By: Christine Alderman To: NMOCD By: Email	

Initial Response

The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury

☒ The source of the release has been stopped.

☒ The impacted area has been secured to protect human health and the environment.

☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.

☒ All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have not been undertaken, explain why:

Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: Christine Alderman_____ Title: ESH Supervisor_____

Signature: _____ Date: 8/26/2016_____

email: calderman@cimarex.com_____ Telephone: (432) 853-7059_____

OCD Only

Received by: _____ Date: _____

Incident ID	nJXK1624425919
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release?	230 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☐ Yes ☒ No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

Characterization Report Checklist: ***Each of the following items must be included in the report.***

☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
☒ Field data
☒ Data table of soil contaminant concentration data
☒ Depth to water determination
☒ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
☒ Boring or excavation logs
☒ Photographs including date and GIS information
☒ Topographic/Aerial maps
☒ Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

Form C-141
Page 4

State of New Mexico
Oil Conservation Division

Incident ID	nJXK1624425919
District RP	
Facility ID	
Application ID	

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: Laci Luig_____ Title: ESH Specialist_____

Signature: Laci Luig_____ Date: 3/16/2022_____

email: laci.luig@coterra.com_____ Telephone: (432) 208-3035_____

OCD Only

Received by: _____ Date: _____

Incident ID	nJXK1624425919
District RP	
Facility ID	
Application ID	

Remediation Plan

Remediation Plan Checklist: ***Each of the following items must be included in the plan.***

- ☒ Detailed description of proposed remediation technique
- ☒ Scaled sitemap with GPS coordinates showing delineation points
- ☒ Estimated volume of material to be remediated
- ☒ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
- ☐ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

Deferral Requests Only: ***Each of the following items must be confirmed as part of any request for deferral of remediation.***

- ☐ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.
- ☐ Extents of contamination must be fully delineated.
- ☐ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: Laci Luig Title: ESH Specialist

Signature: Laci Luig Date: 3/16/2022

email: laci.luig@coterra.com Telephone: (432) 208-3035

OCD Only

Received by: Date:

☐ Approved ☒ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral Approved

Signature: Jennifer Nobui Date: 05/09/2022

General Information

NMOCD District:	District 1	Incident ID:	NTO1501548835, NJXK1624425919
Landowner:	Federal	RP Reference:	1RP-3506, 1RP-4423
Client:	Cimarex Energy Company	Site Location:	Red Hills 28 SWD
Date:	February 22, 2022	Project #:	21E-02797-002-03
Client Contact:	Laci Luig	Phone #:	(432) 208-3035
Vertex PM:	Michael Moffitt	Phone #:	(575) 988-2681

Objective

The objective of the environmental remediation work plan is to identify exceedances found during the site assessment/characterization activity and propose an appropriate remediation technique to address these areas. Areas of environmental concern identified and delineated include: Secondary Containment where the tank battery was located, pasture land east of where the containment was located, area near where the injection line was located, and a historical drilling pit area west of the injection line. Closure criteria has been selected as per New Mexico Administrative Code (NMAC) 19.15.29. All applicable research as it pertains to closure criteria selection is presented in Attachment 1. The closure criteria for the site is presented below.

Table 1. Closure Criteria for Soils Impacted by a Release

Minimum depth below any point within the horizontal boundary of the release to groundwater less than 10,000 mg/l TDS	Constituent	Limit
51 feet - 100 feet	Chloride	10,000 mg/kg
	TPH (GRO+DRO+MRO)	2,500 mg/kg
	GRO+DRO	1,000 mg/kg
	BTEX	50 mg/kg
	Benzene	10 mg/kg

Site Assessment/Characterization

Site characterization for the containment area was completed on December 22, 2021. A total of 17 sample points were established and samples collected for field screening where the containment had previously been located. Samples at the deepest vertical distance below closure criteria were submitted to the laboratory for analysis. In total, 12 samples were submitted to Hall Environmental Analysis Laboratory, Albuquerque, New Mexico for analysis. The sample locations are presented in Figure 1, Attachment 2. Laboratory analysis results have been compared to the above noted closure criteria and the results from the characterization activity are presented in Attachment 3. Exceedances are identified in the table as bold with a grey background.

Cimarex retained Vertex to collect lithological data for a test soil borehole for depth to groundwater determination with Scarborough Drilling, Inc. where a borehole was drilled on a neighboring Cimarex location to a depth of 55 feet. Documentation pertaining to site characterization and depth to groundwater determination is included in Attachment 1. The borehole was left open for over 72 hours to allow for potential slow infill of groundwater. After the 72-hour waiting period without observing ground water, it was confirmed that groundwater beneath the site is greater than 55 feet. The borehole was properly abandoned with drill cuttings and bentonite chips. The daily field report is included in Attachment 4.

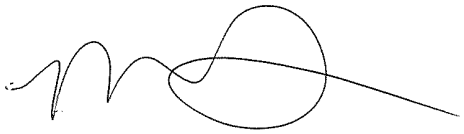
Remedial Activities

Areas identified with contaminant concentrations above closure criteria will be remediated through excavation. Laboratory results from the site assessment/characterization have been referenced to estimate both the vertical and horizontal limits of the impacts and the volume of soil to be removed. Excavation will be completed down to four feet bgs to meet reclamation standards and any additional soil will be excavated to the extents of the known contamination or in one feet increments, whichever is the lessor. Field screening will be utilized to confirm removal of contaminanted soil below the applicable closure criteria. Contaminated soils will be stored on a 30mil liner prior to disposal at an approved facility. Once excavation is complete, confirmatory samples will be collected and laboratory analysis completed to confirm closure criteria guidelines are met. Excavations will be backfilled with clean soil sourced locally.

1RP-4423/1RP-3506

The above listed NMOCD tracking numbers will all be remediated simultaneously. Areas without known vertical delineation will be assessed at the time of excavation. In accordance with NMAC 19.15.29.13 Paragraph (1) of Subparagraph D, the top four feet of the contaminated area will be remediated with non-waste containing, uncontaminated, earthen material. Confirmatory samples will validate that excavation wall areas are below Table 1 closure criteria. A hydro vac truck will be utilized to remove contaminated soil in close proximity of the flowlines. Heavy equipment will be used to complete excavation. Field screening will be utilized to find the horizontal and vertical extents of the spill areas. Confirmatory samples will be collected as per NMOCD guidance and submitted for laboratory analysis of all applicable parameters. The estimated volume to be excavated is **5,470 cubic yards**.

Should you have any questions or concerns, please do not hesitate to contact the undersigned at 575.361.9880 or mpeppin@vertex.ca.



Monica Peppin — February 28, 2022
SR. ENVIRONMENTAL TECHNICIAN, REPORTING — Date

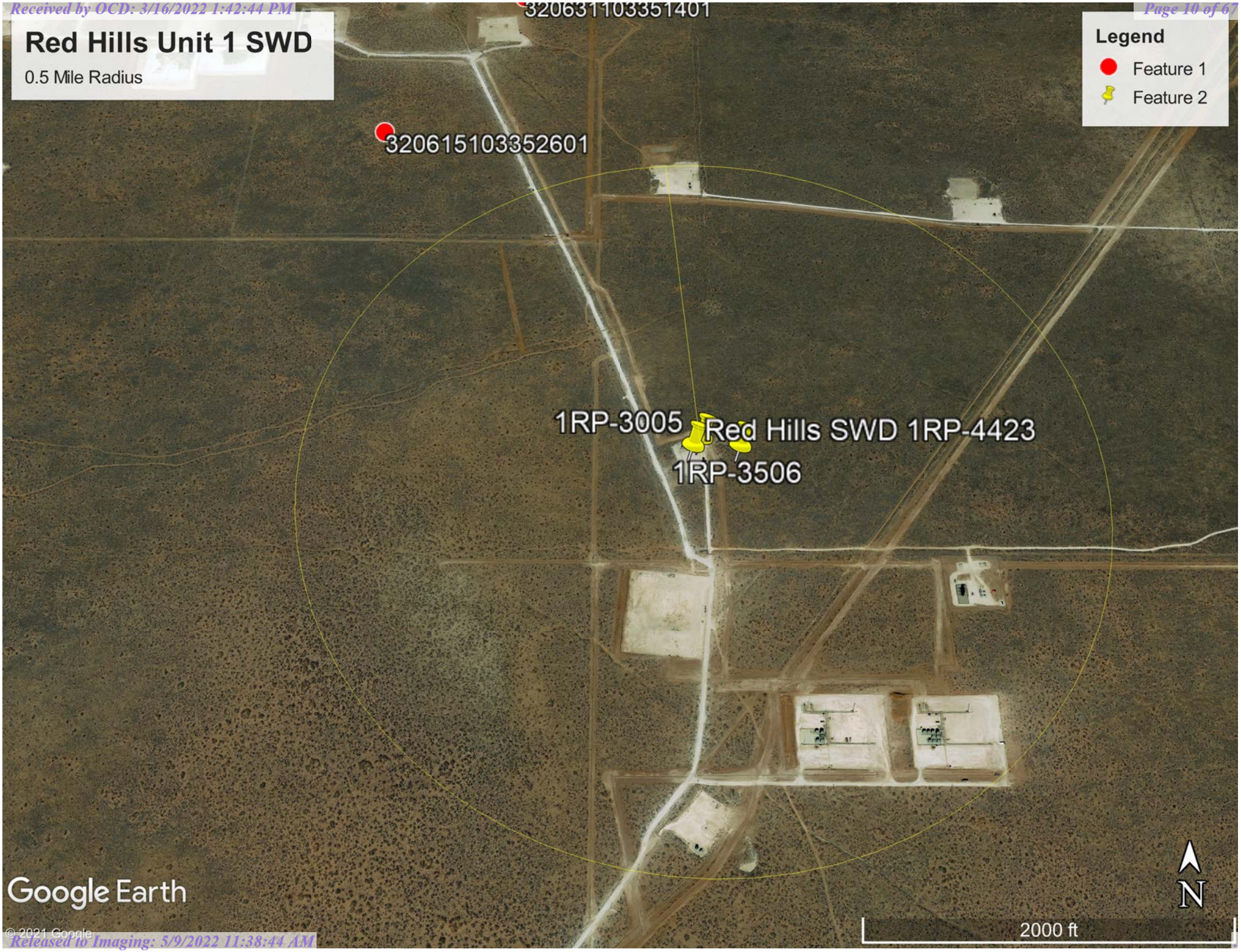
Dhugal Hanton B.Sc., P.Ag., SR/WA, P.Biol. — February 28, 2022
VICE PRESIDENT, REPORT REVIEW — Date

Attachments

Attachment 1: Closure Criteria Research
Attachment 2: Sample Locations – Figure 1
Attachment 3: Laboratory Results Table and Laboratory Analysis
Attachment 4: Daily Field Reports

ATTACHMENT 1

Closure Criteria Worksheet			
Site Name: Red Hills Unit 1 SWD			
Spill Coordinates:		**X: 32.09614**	**Y: -103.58357**
Site Specific Conditions		**Value**	**Unit**
1	Depth to Groundwater	**55**	feet
2	Within 300 feet of any continuously flowing watercourse or any other significant watercourse	130,336	feet
3	Within 200 feet of any lakebed, sinkhole or playa lake (measured from the ordinary high-water mark)	136,449	feet
4	Within 300 feet from an occupied residence, school, hospital, institution or church	45,681	feet
5	i) Within 500 feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes, **or**	45,681	feet
	ii) Within 1000 feet of any fresh water well or spring	45,681	feet
6	Within incorporated municipal boundaries or within a defined municipal fresh water field covered under a municipal ordinance adopted pursuant to Section 3-27-3 NMSA 1978 as amended, unless the municipality specifically approves	No	(Y/N)
7	Within 300 feet of a wetland	6,340	feet
8	Within the area overlying a subsurface mine	No	(Y/N)
9	Within an unstable area (Karst Map)	Low	Critical High Medium Low
10	Within a 100-year Floodplain	>100	year
11	Soil Type	Pyote loamy fine sand	
12	Ecological Classification	Loamy sand	
13	Geology	Qep	
	NMAC 19.15.29.12 E (Table 1) Closure Criteria	51-100'	<50' 51-100' >100'


Red Hills Unit 1 SWD
0.5 Mile Radius
Legend
Feature 1
Feature 2
320631103351401
320615103352601
1RP-3005
Red Hills SWD 1RP-4423
1RP-3506
Google Earth
© 2021 Google
N
2000 ft


Red Hills Unit 1 SWD
Distance to DTGW Borehole: 0.19 miles
Legend
Feature 1
Red Hills Unit 1 SWD
BH1
Google Earth
600 ft
N

VERTEX

Client Name Cimarex Energy	Borehole Location: 32.093751, -103.584471	Start Date: February 1, 2022	Logged by: Michael Moffitt	Northing
Project Number: 21E-02797-002	Borehole No. 1	End Date: February 1, 2022	Checked by: Michael Moffitt	Easting
Project Name: Red Hills Unit 1 SWD	Borehole Diameter (in): 2 inches	Drilling Company: Scarborough Drilling, Inc.	Top of Well Elevation (m or ft): 3384 foot	UTM Zone
Project Location: Lea County	Total Depth (m or ft): 55 Foot	Drilling Method: Air Rotary	Depth to Water (m or ft): N/A	Page of

Top (m or ft)	Bottom (m or ft)	% Major (>50%)		% Minor (10-40%)		% Trace (<10%)		Gradation	Grain Size		Moisture	Plasticity	Color	Notes
		Fine	Coarse	Fine	Coarse	Fine	Coarse	(Major and Coarse only)	Major	Minor				
2	2	Clay Silt	Sand Gravel	Clay Silt	Sand Gravel	Clay Silt	Sand Gravel	Poorly Graded Well Graded	Fine Medium Coarse	Fine Medium Coarse	Dry Damp Moist Wet Saturated	Non Plastic Slightly Plastic Plastic Very Plastic	Dark Red/Brown	
Top	Bottom													
4	4	Clay Silt	Sand Gravel	Clay Silt	Sand Gravel	Clay Silt	Sand Gravel	Poorly Graded Well Graded	Fine Medium Coarse	Fine Medium Coarse	Dry Damp Moist Wet Saturated	Non Plastic Slightly Plastic Plastic Very Plastic	Light Red/Brown	
Top	Bottom													
6	6	Clay Silt	Sand Gravel	Clay Silt	Sand Gravel	Clay Silt	Sand Gravel	Poorly Graded Well Graded	Fine Medium Coarse	Fine Medium Coarse	Dry Damp Moist Wet Saturated	Non Plastic Slightly Plastic Plastic Very Plastic	Light Red/Brown	
Top	Bottom													
8	8	Clay Silt	Sand Gravel	Clay Silt	Sand Gravel	Clay Silt	Sand Gravel	Poorly Graded Well Graded	Fine Medium Coarse	Fine Medium Coarse	Dry Damp Moist Wet Saturated	Non Plastic Slightly Plastic Plastic Very Plastic	Light Red/Brown	
Top	Bottom													
10	10	Clay Silt	Sand Gravel	Clay Silt	Sand Gravel	Clay Silt	Sand Gravel	Poorly Graded Well Graded	Fine Medium Coarse	Fine Medium Coarse	Dry Damp Moist Wet Saturated	Non Plastic Slightly Plastic Plastic Very Plastic	Light Red/Brown	
Top	Bottom													
15	15	Clay Silt	Sand Gravel	Clay Silt	Sand Gravel	Clay Silt	Sand Gravel	Poorly Graded Well Graded	Fine Medium Coarse	Fine Medium Coarse	Dry Damp Moist Wet Saturated	Non Plastic Slightly Plastic Plastic Very Plastic	Light Red/Brown	
Top	Bottom													
20	20	Clay Silt	Sand Gravel	Clay Silt	Sand Gravel	Clay Silt	Sand Gravel	Poorly Graded Well Graded	Fine Medium Coarse	Fine Medium Coarse	Dry Damp Moist Wet Saturated	Non Plastic Slightly Plastic Plastic Very Plastic	Light Red/Brown	
Top	Bottom													
25	25	Clay Silt	Sand Gravel	Clay Silt	Sand Gravel	Clay Silt	Sand Gravel	Poorly Graded Well Graded	Fine Medium Coarse	Fine Medium Coarse	Dry Damp Moist Wet Saturated	Non Plastic Slightly Plastic Plastic Very Plastic	Light Red/Brown	

VERTEX

Top	Bottom													
25	30	Clay Silt	Sand Gravel	Clay Silt	Sand Gravel	Clay Silt	Sand Gravel	Poorly Graded Well Graded	Fine Medium Coarse	Fine Medium Coarse	Dry Damp Moist Wet Saturated	Non Plastic Slightly Plastic Plastic Very Plastic	Beige/White	
Top	Bottom													
30	35	Clay Silt	Sand Gravel	Clay Silt	Sand Gravel	Clay Silt	Sand Gravel	Poorly Graded Well Graded	Fine Medium Coarse	Fine Medium Coarse	Dry Damp Moist Wet Saturated	Non Plastic Slightly Plastic Plastic Very Plastic	Tan/Beige	
Top	Bottom													
35	40	Clay Silt	Sand Gravel	Clay Silt	Sand Gravel	Clay Silt	Sand Gravel	Poorly Graded Well Graded	Fine Medium Coarse	Fine Medium Coarse	Dry Damp Moist Wet Saturated	Non Plastic Slightly Plastic Plastic Very Plastic	Light Red/Brown	
Top	Bottom													
40	45	Clay Silt	Sand Gravel	Clay Silt	Sand Gravel	Clay Silt	Sand Gravel	Poorly Graded Well Graded	Fine Medium Coarse	Fine Medium Coarse	Dry Damp Moist Wet Saturated	Non Plastic Slightly Plastic Plastic Very Plastic	Light Red/Brown	
Top	Bottom													
45	50	Clay Silt	Sand Gravel	Clay Silt	Sand Gravel	Clay Silt	Sand Gravel	Poorly Graded Well Graded	Fine Medium Coarse	Fine Medium Coarse	Dry Damp Moist Wet Saturated	Non Plastic Slightly Plastic Plastic Very Plastic	Light Red/Brown	
Top	Bottom													
55	55	Clay Silt	Sand Gravel	Clay Silt	Sand Gravel	Clay Silt	Sand Gravel	Poorly Graded Well Graded	Fine Medium Coarse	Fine Medium Coarse	Dry Damp Moist Wet Saturated	Non Plastic Slightly Plastic Plastic Very Plastic	Dark Red/Brown	

Field Screening																	
Depth (m or ft)																	
CVC/VOC (ppm or LEL)																	
EC (µS/m or µS/cm)																	
Lab Sampling (Check Box)																	

National Water Information System: Web Interface

USGS Water Resources

Data Category: Groundwater | Geographic Area: United States | GO

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- Explore the *NEW* USGS National Water Dashboard interactive map to access real-time water data from over 13,500 stations nationwide.
- Full News

Groundwater levels for the Nation

* IMPORTANT: Next Generation Station Page

Search Results -- 1 sites found

site_no list =

- 320504103361801

Minimum number of levels = 1

Save file of selected sites to local disk for future upload

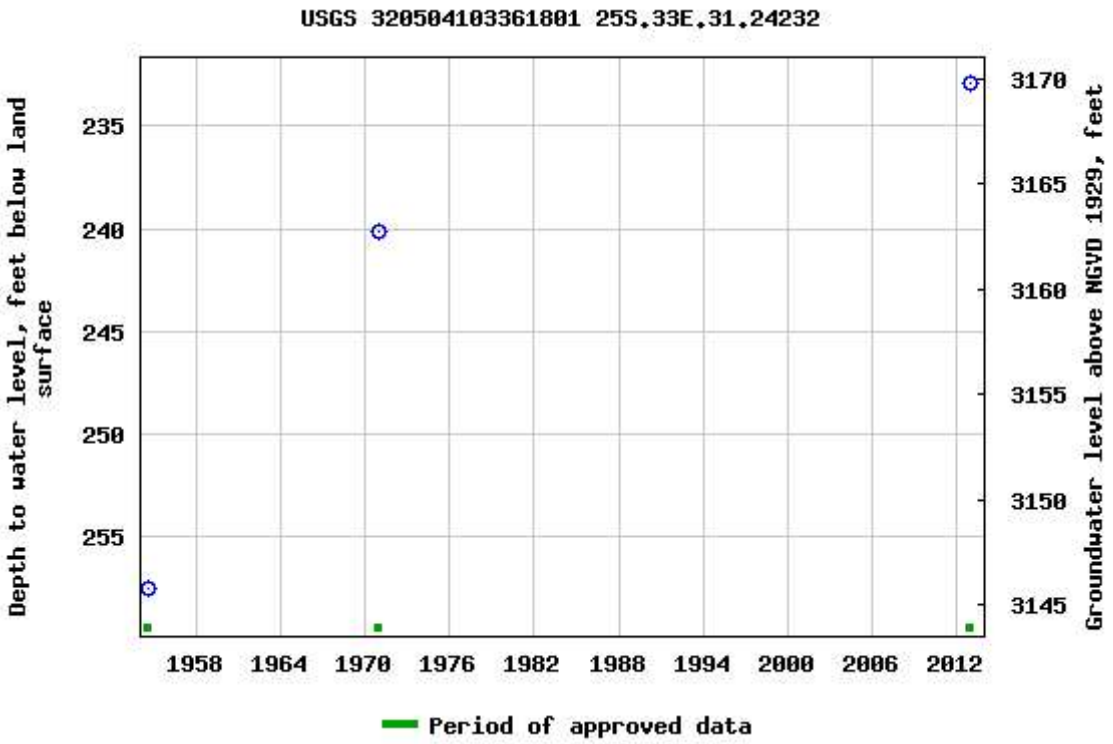
USGS 320504103361801 25S.33E.31.24232

Available data for this site | Groundwater: Field measurements | GO

Lea County, New Mexico
Hydrologic Unit Code 13070001
Latitude 32°05'21.6", Longitude 103°36'12.7" NAD83
Land-surface elevation 3,403.00 feet above NGVD29
The depth of the well is 320 feet below land surface.
This well is completed in the Other aquifers (N9999OTHER) national aquifer.
This well is completed in the Ogallala Formation (121OGLL) local aquifer.

Output formats

Table of data
Tab-separated data
Graph of data
Reselect period



Breaks in the plot represent a gap of at least one year between field measurements.
Download a presentation-quality graph

Questions about sites/data?
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Automated retrievals
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Title: Groundwater for USA: Water Levels
URL: https://nwis.waterdata.usgs.gov/nwis/gwlevels?

Page Contact Information: USGS Water Data Support Team
Page Last Modified: 2021-08-18 17:01:58 EDT
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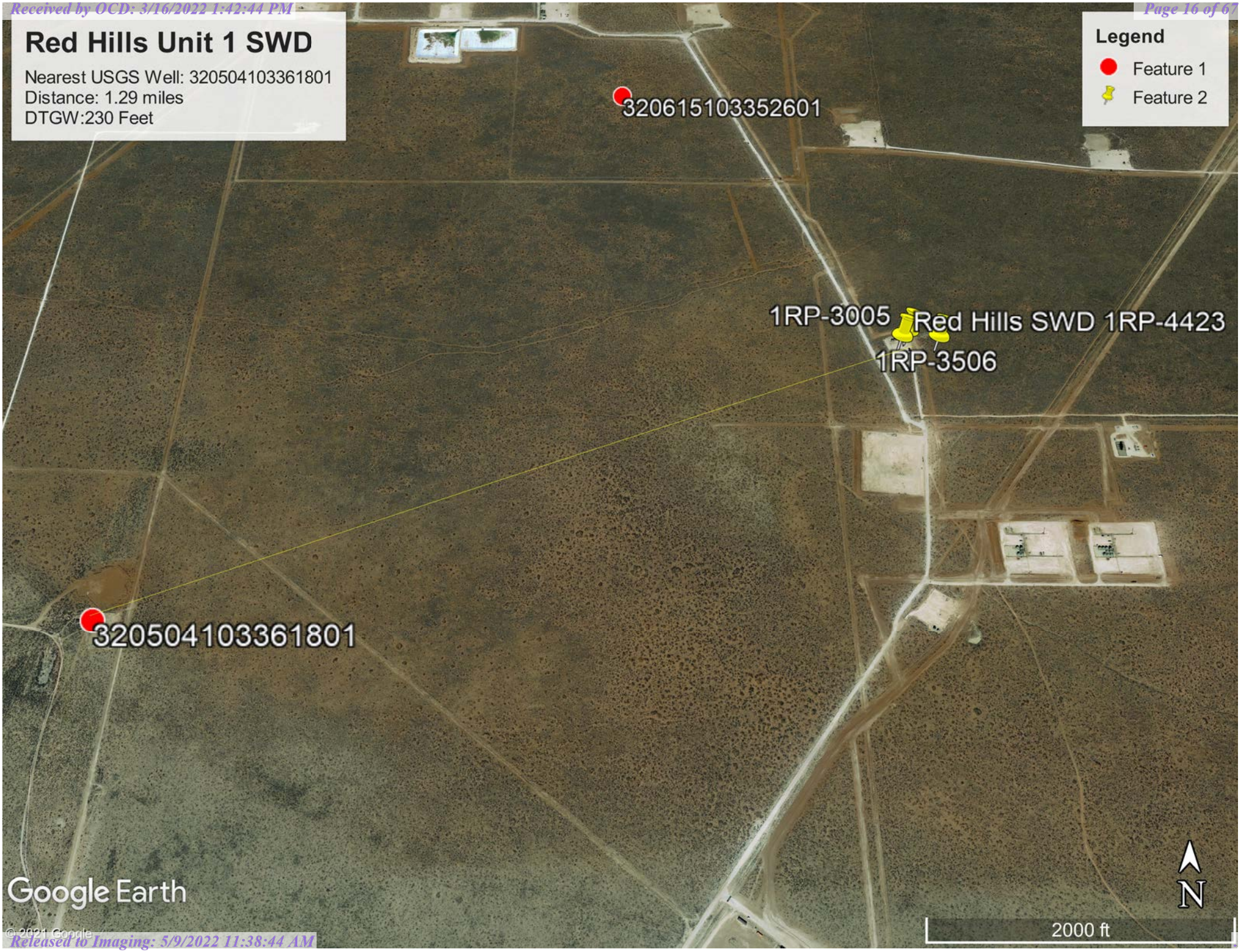
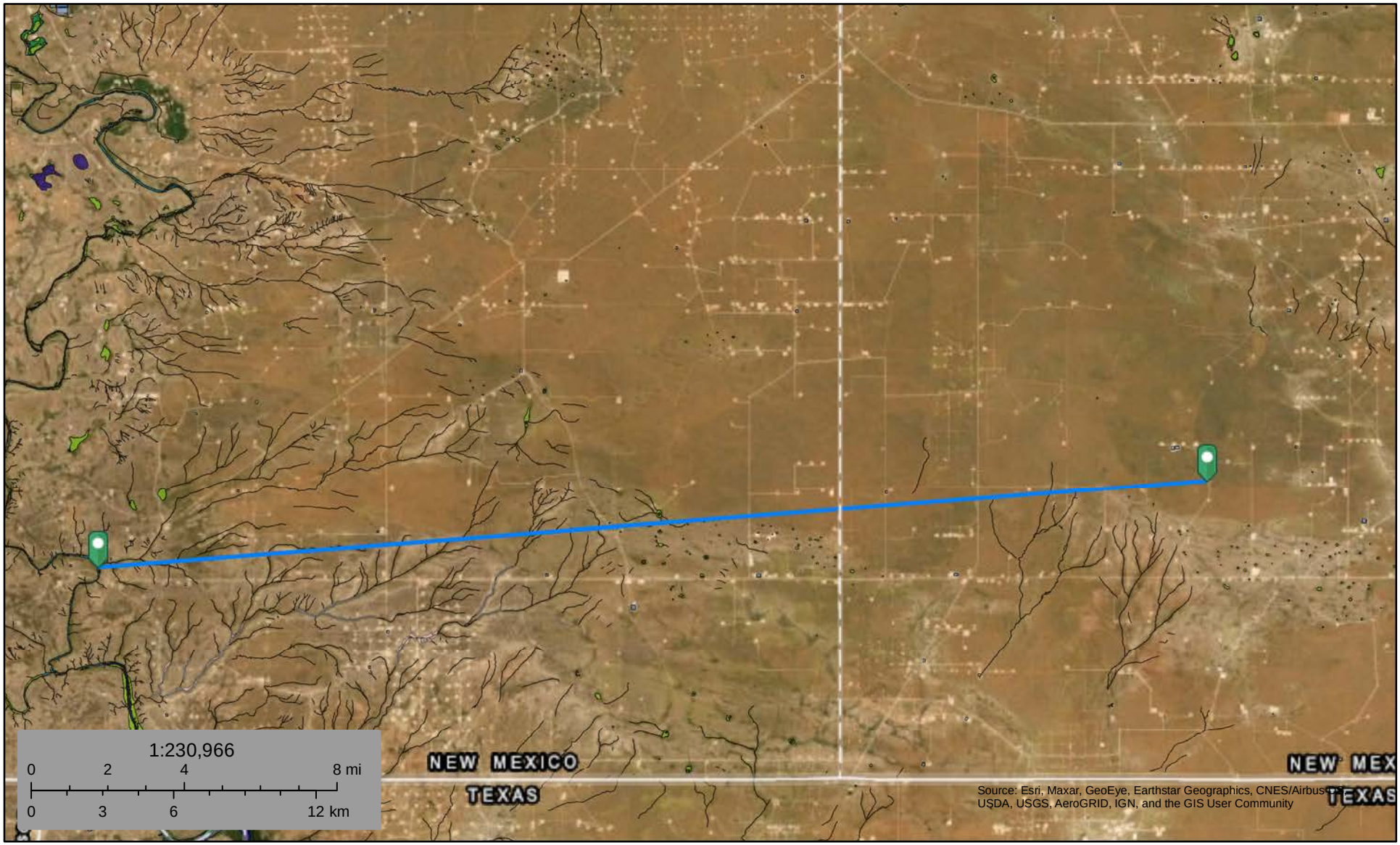

Red Hills Unit 1 SWD
Nearest USGS Well: 320504103361801
Distance: 1.29 miles
DTGW:230 Feet
Legend
Feature 1
Feature 2
320615103352601
1RP-3005
Red Hills SWD 1RP-4423
1RP-3506
320504103361801
Google Earth
© 2021 Google
N
2000 ft

U.S. Fish and Wildlife Service
National Wetlands Inventory

Red Hills Unit 1 SWD



August 18, 2021

Wetlands

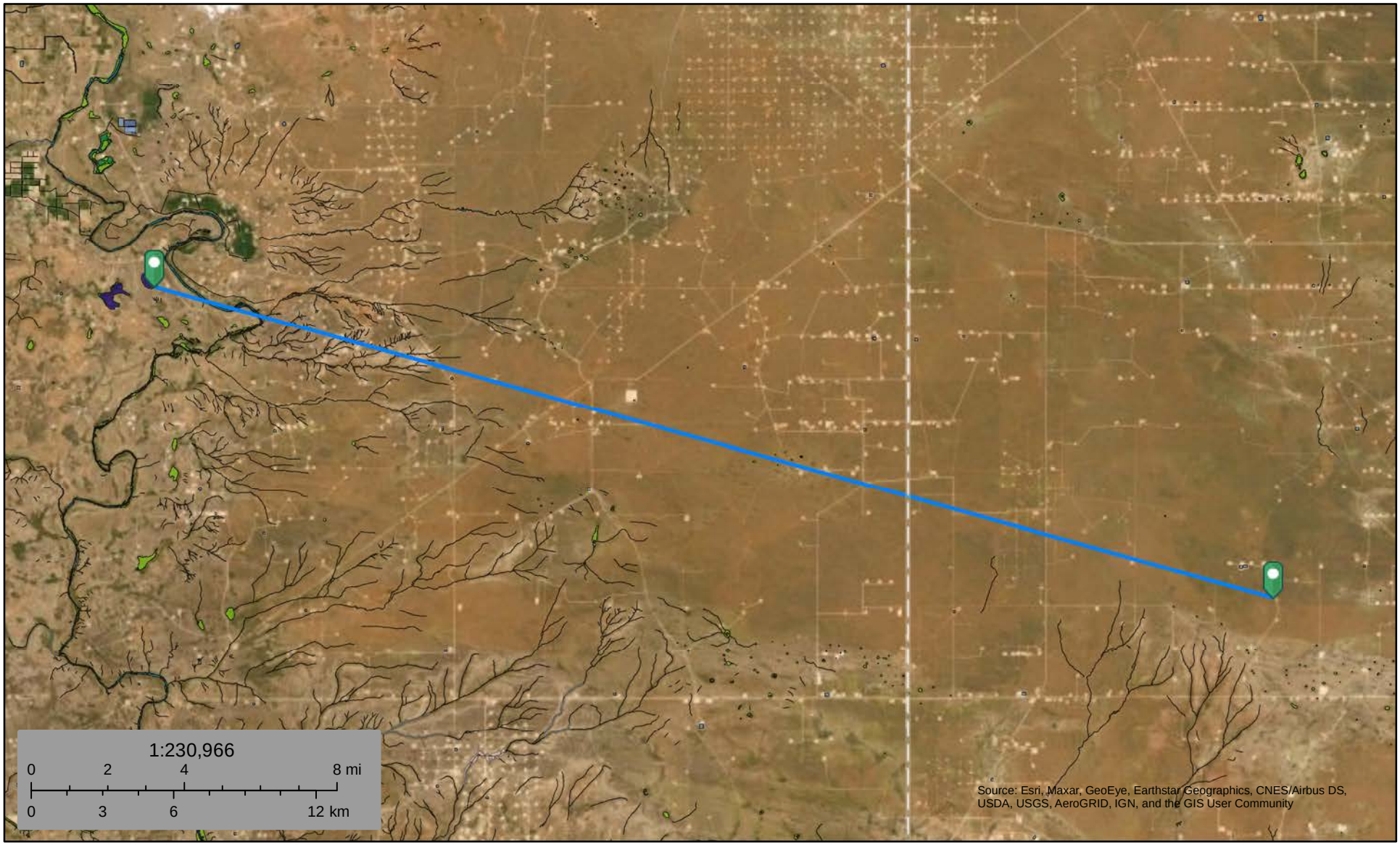
- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

National Wetlands Inventory (NWI)
This page was produced by the NWI mapper

U.S. Fish and Wildlife Service
National Wetlands Inventory

Red Hills Unit 1 SWD



August 18, 2021

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
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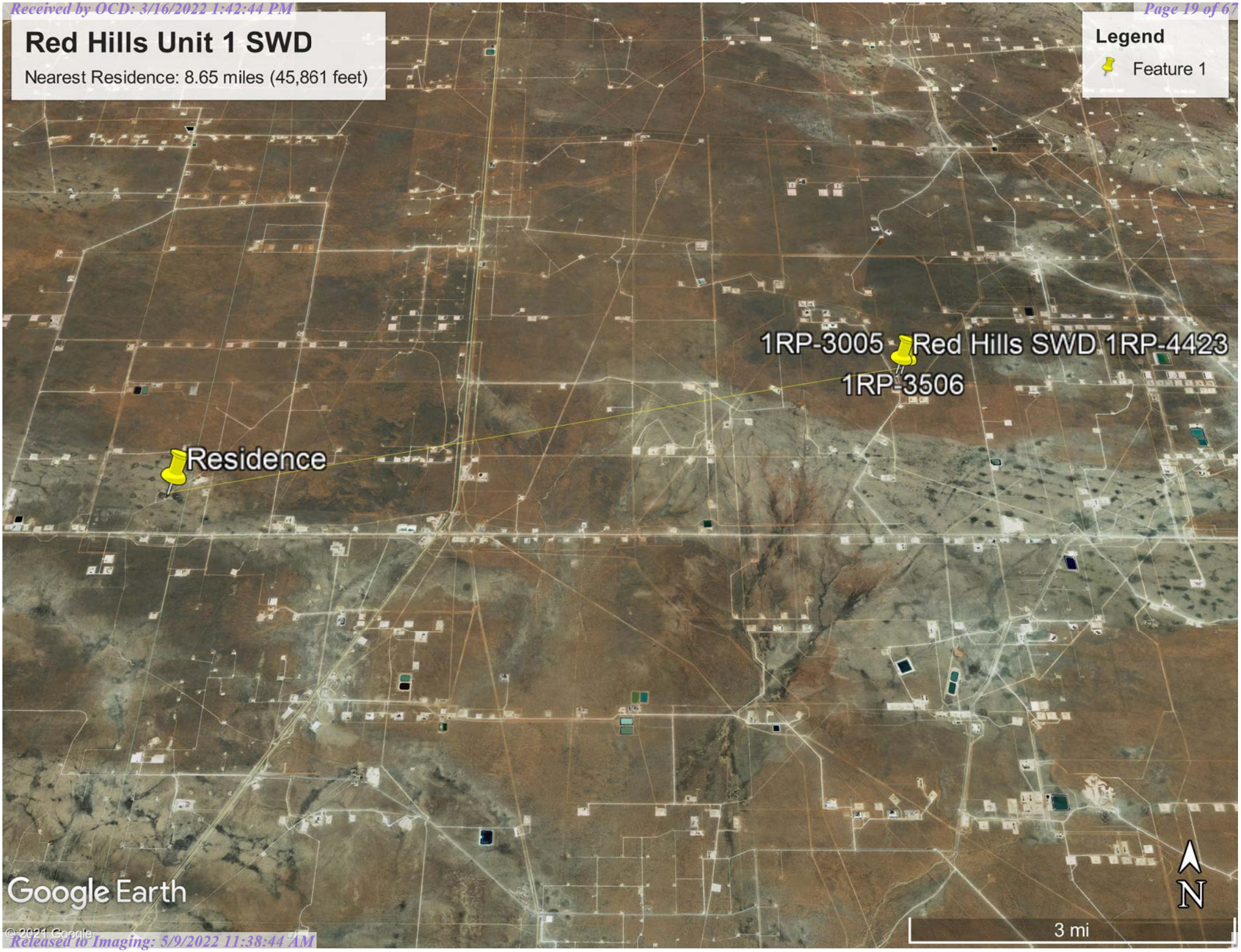
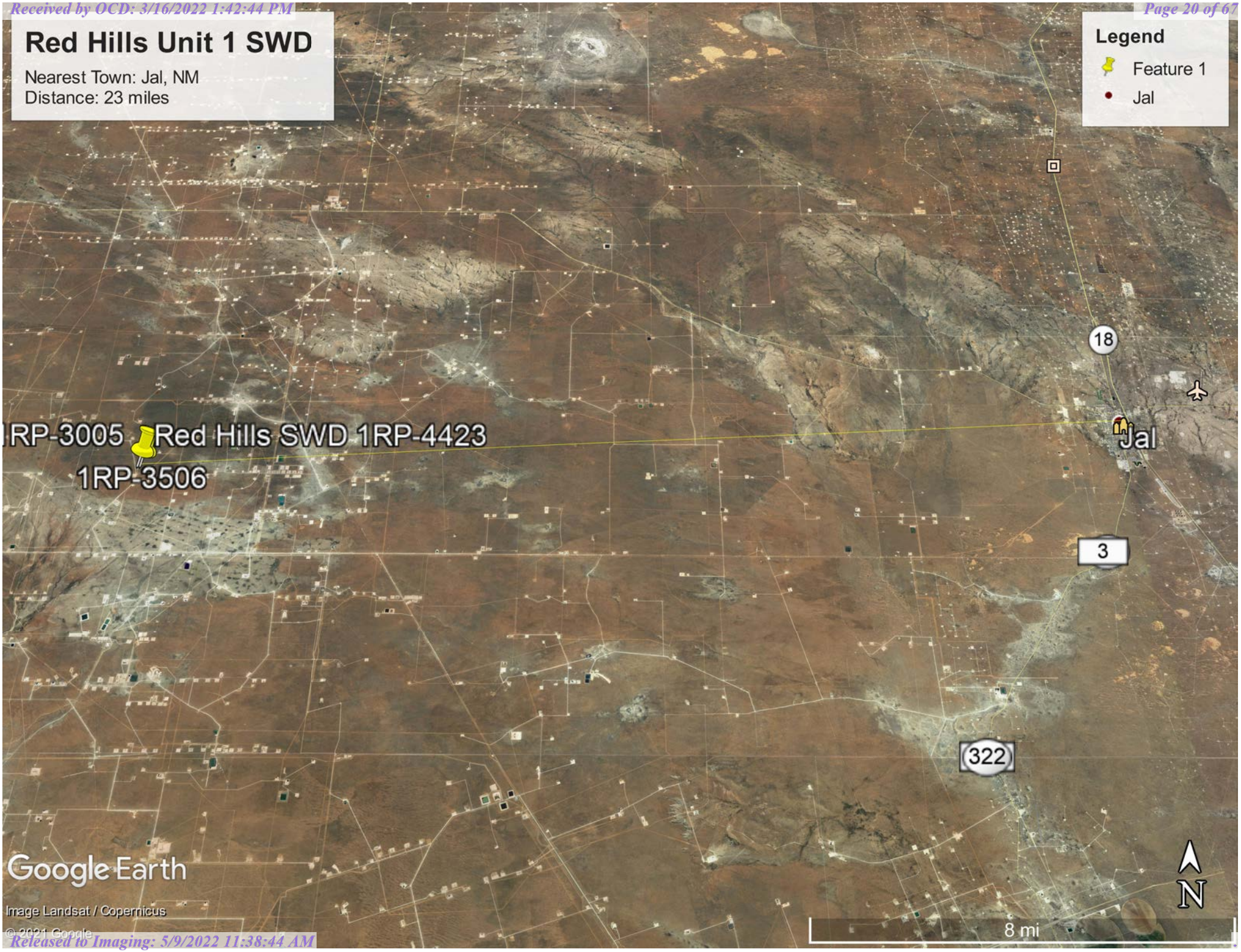
- Other
- Riverine

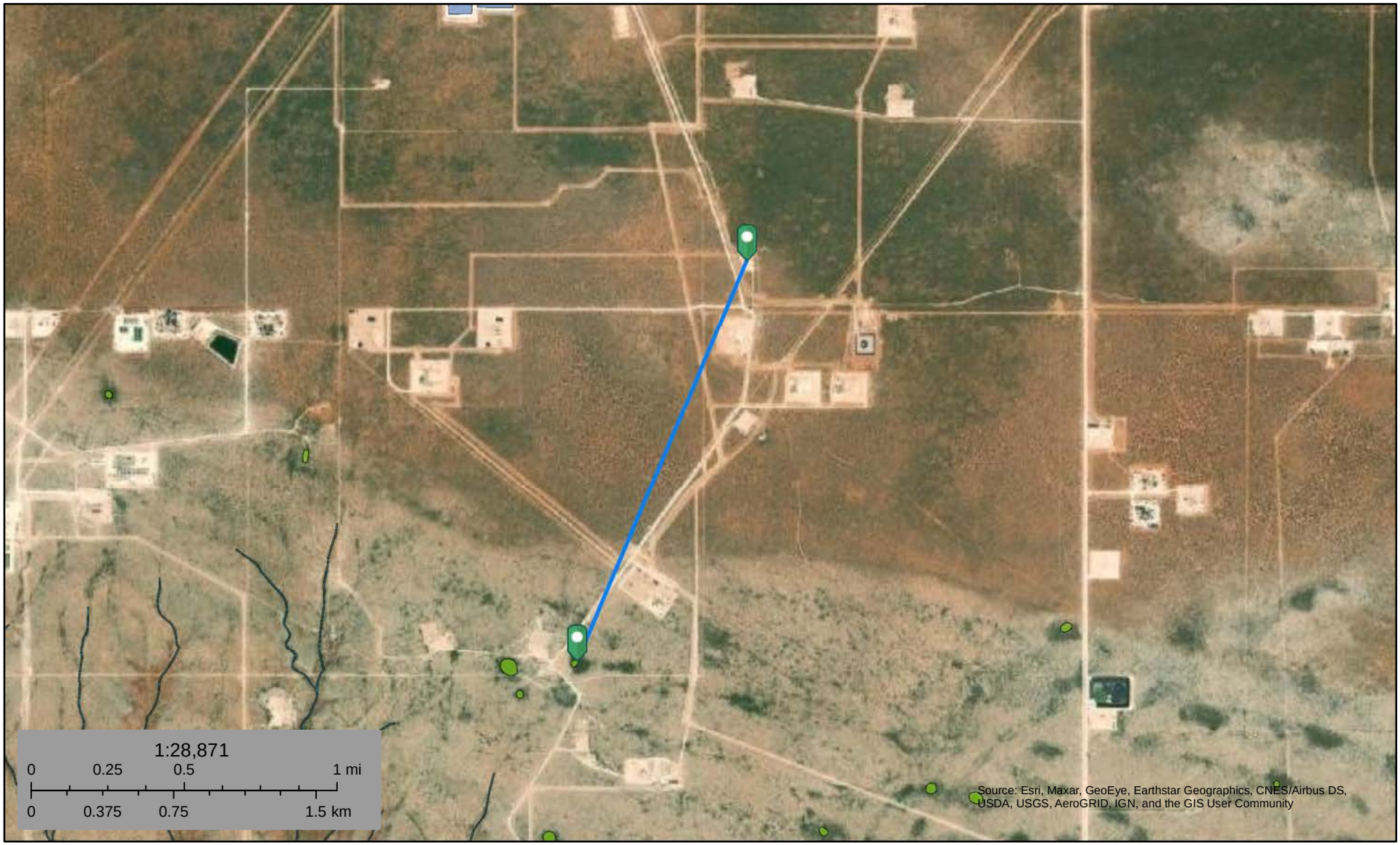
This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.


Red Hills Unit 1 SWD
Nearest Residence: 8.65 miles (45,861 feet)
Legend
Feature 1
1RP-3005
Red Hills SWD 1RP-4423
1RP-3506
Residence
Google Earth
© 2021 Google
N
3 mi


Red Hills Unit 1 SWD
Nearest Town: Jal, NM
Distance: 23 miles
Legend
Feature 1
Jal
RP-3005
Red Hills SWD 1RP-4423
1RP-3506
18
Jal
3
322
Google Earth
Image Landsat / Copernicus
© 2021 Google
8 mi
N

U.S. Fish and Wildlife Service
National Wetlands Inventory

Red Hills Unit 1 SWD

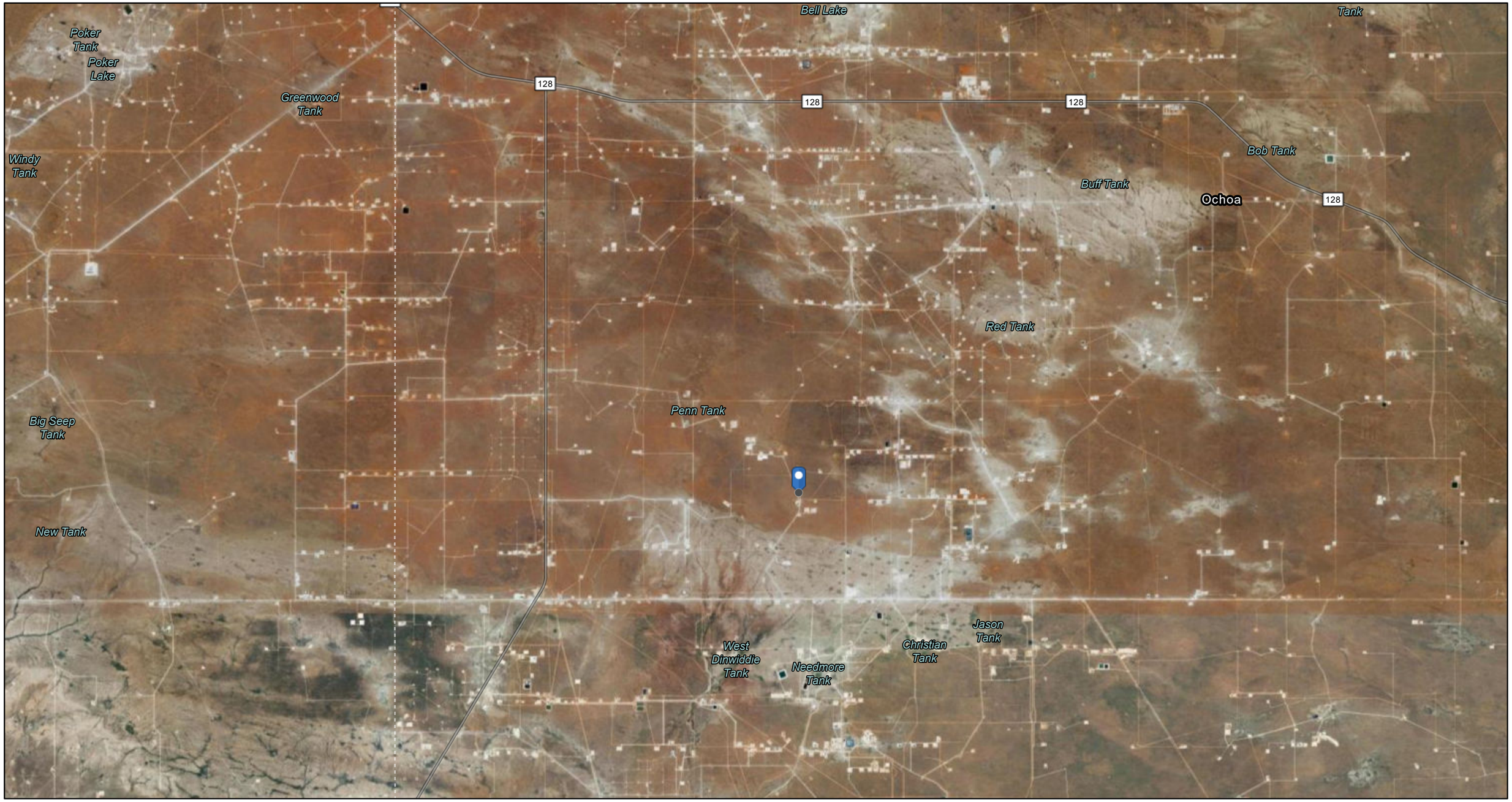


August 18, 2021

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

Red Hills Unit 1 SWD



8/18/2021, 3:49:28 PM

1:144,448

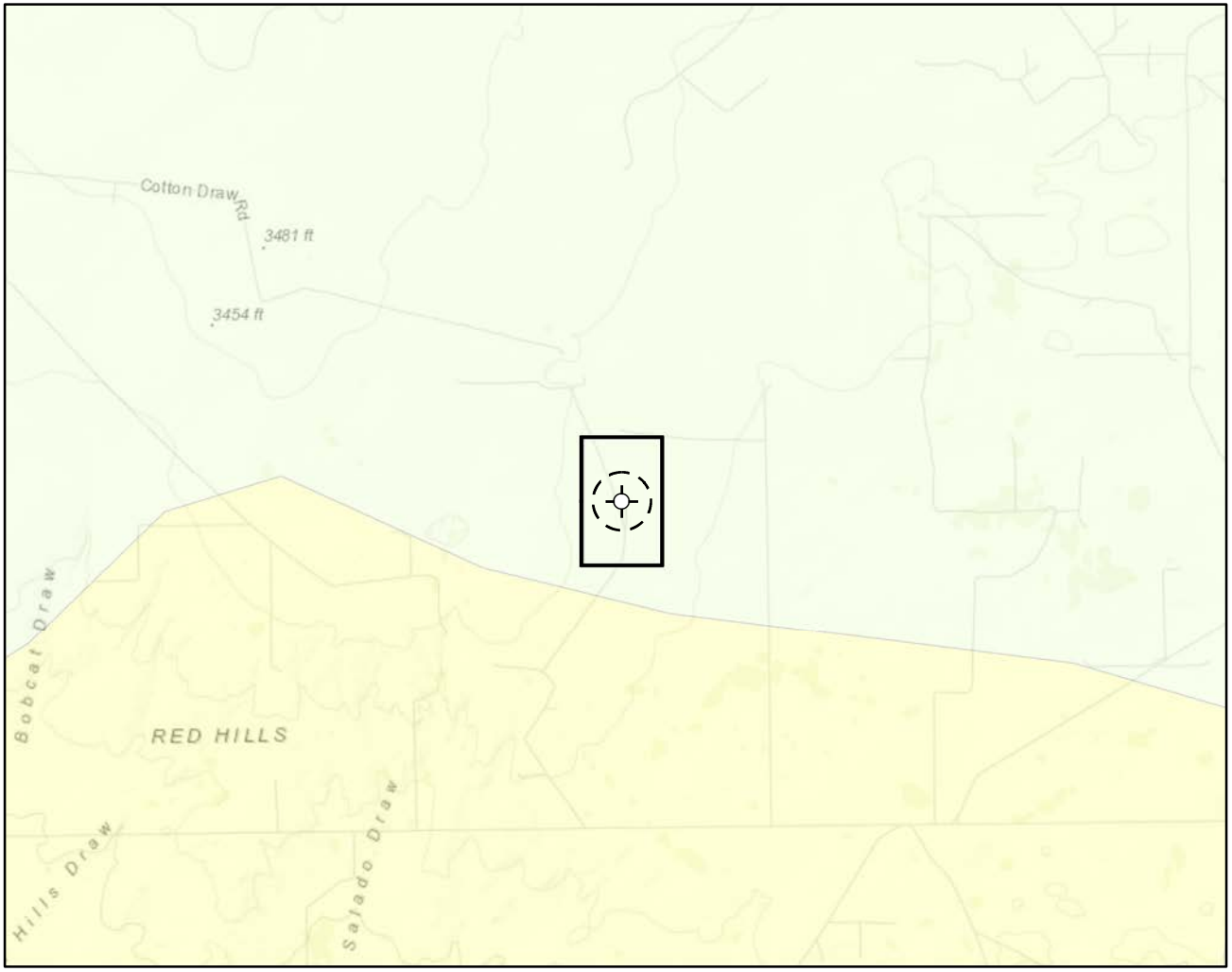
0 1.5 3 6 mi

0 2.5 5 10 km

Source: Esri, USDA FSA, Texas Parks & Wildlife, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA, Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/ Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User

EMNRD MMD GIS Coordinator

NM Energy, Minerals and Natural Resources Department (http://nm-emnrd.maps.arcgis.com/apps/webappbuilder/index.html?id=7ebfa3c432db42978d66c99a9cc8311a)



Karst Potential

- Critical
- High
- Medium
- Low

- Site Location
- Site Buffer (1,000 ft.)

Overview Map

0 0.25 0.5 1 mi

Detail Map

0 150 300 600 ft.

VERTEX

Map Center:
Lat/Long: 32.096140, -103.583570

NAD 1983 UTM Zone 13N
Date: Aug 18/21

N

Karst Potential Map
Red Hills Unit SWD

FIGURE:
4

CIMAREX

Geospatial data presented in this figure may be derived from external sources and Vertex does not assume any liability for inaccuracies. This figure is intended for reference use only and is not certified for legal, survey, or engineering purposes.

Note: Inset Map, ESRI 2020; Overview Map: ESRI World Topographic

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Document Path: G:\1-Projects_US PROJECTS\Cimarex\20E-02797\002 - Red Hills Unit 1 SWD\Figure 4 Karst Potential Map - Red Hills Unit 1 SWD.mxd

National Flood Hazard Layer FIRMette

FEMA

103°35'20"W 32°6'1"N

103°34'42"W 32°5'31"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 8/18/2021 at 5:33 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

Soil Map—Lea County, New Mexico

Map Scale: 1:1,930 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 25 50 100 150

Feet
0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Lea County, New Mexico
Survey Area Data: Version 17, Jun 8, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Feb 7, 2020—May 12, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
PT	Pyote loamy fine sand	15.3	100.0%
Totals for Area of Interest		**15.3**	**100.0%**

Lea County, New Mexico

PT—Pyote loamy fine sand

Map Unit Setting

National map unit symbol: dmqp
Elevation: 3,000 to 3,900 feet
Mean annual precipitation: 10 to 12 inches
Mean annual air temperature: 60 to 62 degrees F
Frost-free period: 190 to 200 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Pyote and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pyote

Setting

Landform: Plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy eolian deposits derived from sedimentary rock

Typical profile

A - 0 to 25 inches: loamy fine sand
Bt - 25 to 60 inches: fine sandy loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Gypsum, maximum content: 1 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 2.0
Available water supply, 0 to 60 inches: Low (about 5.3 inches)

Interpretive groups

Land capability classification (irrigated): 6e
Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: A
Ecological site: R042XC003NM - Loamy Sand
Hydric soil rating: No

Minor Components

Maljamar
Percent of map unit: 8 percent
Ecological site: R042XC003NM - Loamy Sand
Hydric soil rating: No

Palomas
Percent of map unit: 7 percent
Ecological site: R042XC003NM - Loamy Sand
Hydric soil rating: No

Data Source Information

Soil Survey Area: Lea County, New Mexico
Survey Area Data: Version 17, Jun 8, 2020

Ecological Reference Worksheet

Author(s) / participant(s): John Tunberg,

Contact for lead author : 505-761-4488 **Reference site used? Yes/No** No

Date: 2/17/2010 **MLRA:** 42.3 **Ecological Site:** Loamy Sand This *must* be verified based on soils and climate (see Ecological Site Description). Current plant community *cannot* be used to identify the ecological site.

Indicators: For each indicator, describe the potential for the site. Where possible, **(1)** use numbers, **(2)** include expected range of values for above and below average years for **each** community within the reference state, when appropriate & **(3)** site data. Continue description on separate sheet.

1. Number and extent of rills : There should not be any rills on this site.

After wildfires, or abnormally high human or herbivore impacts or extended drought or combinations of these disturbances rills may double in number on steeper slopes at the margins of this site after high-intensity summer thunderstorms. Any rills formed should not be long lived or interconnected and should heal rapidly.

2. Presence of water flow patterns: None on slopes less than 5%. Few on slopes from 5 to 9% with lenghts of 3 feet or length.

Water flow patterns should only be present following intense storm events on upper slope limits at the margins of this site. Numerous obstructions alter flow paths. Flow pattern length and numbers may double after wildfires, or abnormally high human or herbivore impacts or extended drought or combinations of these disturbances.

3. Number and height of erosional pedestals or terracettes: There should not be any pedestals and terracettes should be rare.

If present plant or rock pedestals and terracettes are almost always in flow patterns. Wind caused pedestals are rare and only would be on the site following after wildfires, or abnormally high human or herbivore impacts or extended drought or combinations of these disturbances. These would show signs of healing within 1 year after event.

4. Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground) :

Bare ground can make up to 20 to 25% of the aerial cover on this site according to the ESD. This value may be too high for a wet year. Bare patch size should be small at less than 12 inches and not connected.

5. Number of gullies and erosion associated with gullies: There should not be any gullies or erosion associated with gullies on this site.

Natural drainages with little to no active cutting are common on this site. There should not be any accelerated erosion. After high-intensity summer thunderstorms or after wildfire, or abnormally high human or herbivore impacts or extended drought or combinations of these disturbances then gully formation would be accelerated for a year or two. Evidence of healing within 1 year of event and continuing after that.

6. Extent of wind scoured, blowouts and/or depositional areas

Wind scoured , blowouts and/or depositional areas should be rare and associated with disturbances (e.g. small mammal burrows, resting areas). Wind erosion is minimal when the site is in a well vegetated condition. Significant wind erosion would only be present following high-intensity summer thunderstorms, after wildfire, or abnormally high human or herbivore impacts or extended drought or combinations of these disturbances. After rain events, exposed soil surfaces form physical crusts that tend to reduce wind erosion. Deposition from off site sources can be common on this site and is in fact a primary soil forming process. This site is succeptable to wind erosion when vegetation is removed or significantly decreased.

7. Amount of litter movement (describe size and distance expected to travel) :

The size of the litter (grass litter) should be small and its movement should be less than 1 meter across bare patches.

8. Soil surface (top few mm) resistance to erosion (stability) values are averages - most sites will show a range of values for both plant canopy and interspaces, if different) :

This site can be susceptible to alluvial erosion. Stability values are estimated to be 3 to 4 in interspaces and 4 to 5 at bases of vegetation. This would be true at the surface and subsurface.

9. Soil surface structures and SOM content (include type and strength of structure, and A-horizon color and thickness for both plant canopy and interspaces, if different) :

A1--0 to 20 inches; yellowish red (5YR 5/6) fine sand, yellowish red (5YR 4/6) moist; single grained; loose; many roots; porous; neutral; clear smooth boundary. (20 to 30 inches thick) The SOM content should be less than 1%.

10. Effect of plant community composition (relative proportion of different functional groups) & spatial distribution on infiltration & runoff:

In a grassland with uniformly distributed grass patches on coarse-textured soils, runoff should be low to nil. Most water infiltrates at the plant bases as well as in the interspaces.

11. Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for

compaction): There should not be any compaction layers on this site.

There are soil profile features in the top 9 inches of the soil profile that would be mistaken for a management induced soil compaction layer. Management induced compaction layers will be more difficult to penetrate than clay lenses.

12. Functional/Structural Groups (list in order of descending dominance by above-ground weight using symbols: indicate much greater than (>>) , greater than (>) , and equal to (=) :

Dominants: Black grama = Dropseeds = Bluestems > Subdominants: Warm season mid grasses > Minor Component: Shrubs (not creosotebush and mesquite) > Forbs

13. Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence) :

Perennial plants are long lived on this site. Long lasting drought can cause some Short-lived perennial component can exhibit significant mortality in drought, black grama tends to exhibit mortality only when exposed to drought in addition to other stressors. Shrubs/yucca should exhibit low mortality rates.

14. Average percent litter cover (_____ %) and depth (_____ inches).

25 to 30 % litter cover on this site. Well distributed. Depth of 1/2 inch.

15. Expected annual production (this is <u>TOTAL</u> above-ground production, not just forage production):

(Low Production 650 lbs./ac.) (Average RV Production 1225 lbs./ac.) (High Production 1800 lbs./ac.) After wildfires, high herbivore impacts, extended drought, or combinations of these disturbances, can cause production to be significantly reduced (100-200 lbs per ac. the first growing season following a wildfire) and recover slowly under below average precipitation regimes.

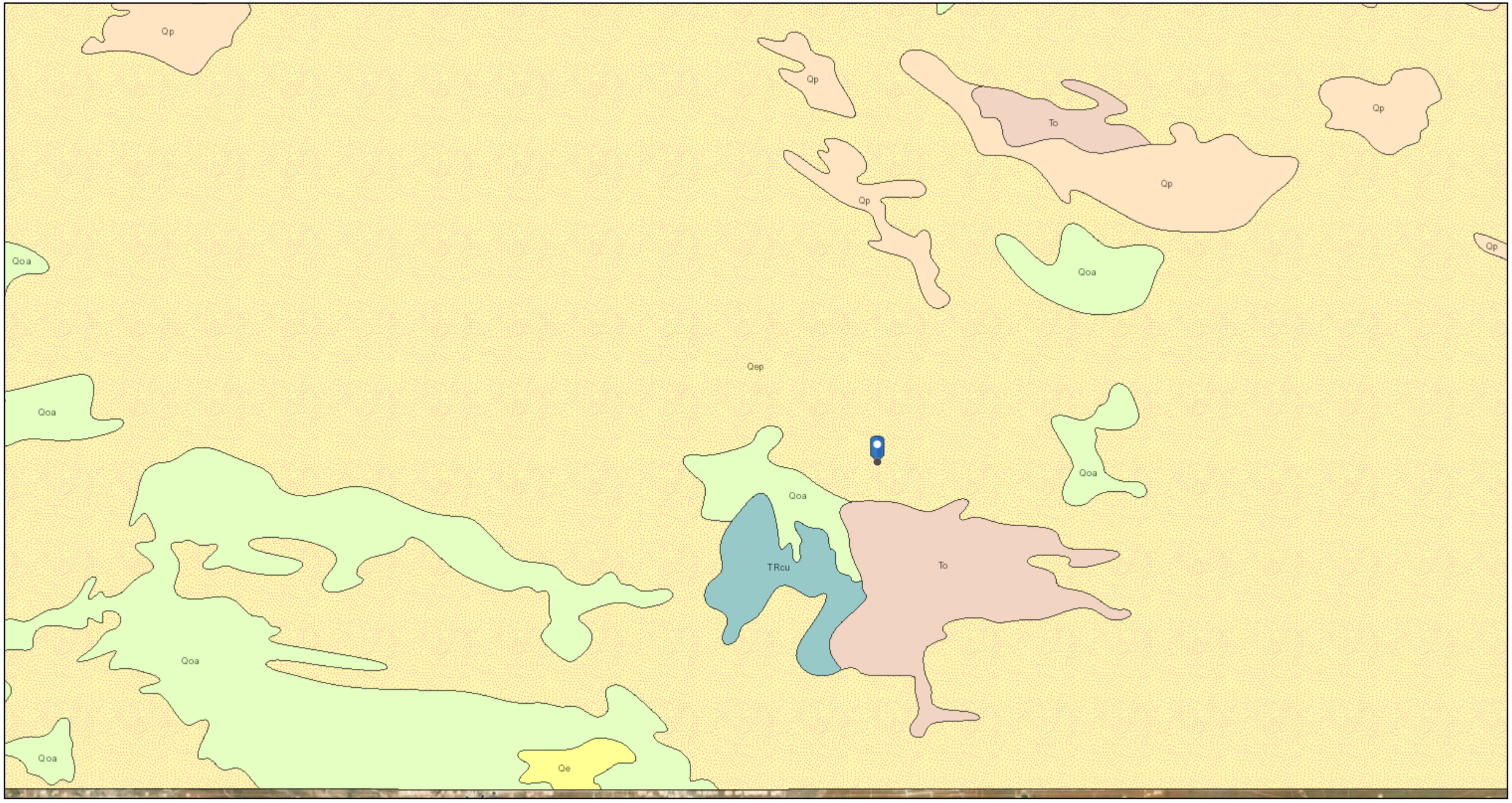
16. Potential invasive (including noxious) species (native and non-native). List species which characterize degraded states and which, after a threshold is crossed, "can, and often do , continue to increase regardless of the management of the site and may eventually dominate

Mesquite, Shinery Oak and creosotebush (where gravel content high) and sand sage can be invaders of this site. Invasive plants should not occur in reference plant community. However, lovegrass, Russian thistle, kochia, and other nonnative annuals may initialy invade following extended disturbance. Mesquite and Shinnery oak and creosote and sand sage and lovegrass are the greatest threat to dominate this site in the long term after disturbance (primarily following wildfire exclusion but also includes high human or herbivore impacts and extended drought). Mesquite and Shinnery Oak and creosote and sand sage and lovegrass are most likely to retain dominance if allowed to alter natural fire regime (this alteration may require poor land management combined with years of wet winter-spring; dry summer-fall conditions). Any of these invaded communities represent a departure from the reference state.

17. Perennial plant reproductive capability :

Black grama reproduces by seed sporadically and reproduction by tiller and stolon can be common. The dropseeds should have high reproductive potential and rapidly recover from drought in the absence of additional stresses (grazing).

Red Hills Unit 1 SWD



8/18/2021, 3:16:39 PM

Lithologic Contacts

- Contact, Exposed
- Contact, Gradational
- Nomenclature change

Faults

- Map Boundary
- Fault, Exposed
- Fault, Intermittent
- Fault, Concealed
- Shere Zone

Dikes

- <all other values>
- Dike
- Dike intruding fault

Volcanic Vents

1:144,448

0 1.5 3 6 mi

0 2.5 5 10 km

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, NMBGMR

ATTACHMENT 2

Borehole

Approximate Lease Boundary

VERTEX

0 12.5 25 50 Feet

Map Center:
Lat/Long: 32.096314, -103.583440

N

Characterization Schematic
Red Hills Unit 1 SWD

FIGURE:
1

CIMAREX

Geospatial data presented in this figure may be derived from external sources and Vertex does not assume any liability for inaccuracies. This figure is intended for reference use only and is not certified for legal, survey, or engineering purposes.

Notes: Background image provided by ESRI, 2020. Borehole locations from GPS, Vertex Professional Services Ltd., 2021.

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Document Path: G:\1-Projects_US PROJECTS\Cimarex\21E-02797\002 - Red Hills Unit 1 SWD\Figure 1 Characterization Schematic Red Hills Unit 1 SWD.mxd

ATTACHMENT 3

Client Name: Cimarex
Site Name: Red Hills SWD 1
NMOCD Tracking #: 1RP-3506
Project #: 21E-02797-002
Lab Report: 2112D85

Table 2. Initial Characterization Sample Field Screen and Laboratory Results - Depth to Groundwater 51-100 feet bgs

Sample Description			Field Screening			Petroleum Hydrocarbons							Inorganic
						Volatile		Extractable					
Sample ID	Depth (ft)	Sample Date	Volatile Organic Compounds (PID)	Extractable Organic Compounds (PetroFlag)	Chloride Concentration	Benzene	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	(GRO + DRO)	Total Petroleum Hydrocarbons (TPH)	Chloride Concentration
			(ppm)	(ppm)	(ppm)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
BH21-01	4	12-22-2021	0	—	320	<0.023	<0.094	<4.7	<9.6	<48	<14.3	<62.3	160
BH21-03	2	12-22-2021	0	—	597	<0.023	<0.092	<4.6	<9.1	<46	<13.7	<59.7	390
BH21-04	4	12-22-2021	63	970	412	<0.11	<0.46	<23	**810**	**260**	**810**	**1070**	220
BH21-05	4	12-22-2021	**1,335**	**1,480**	75	<0.12	2.5	650	**1800**	**240**	**2450**	**2690**	<59
BH21-08	4	12-22-2021	0	**120**	85	<0.025	<0.098	<4.9	<9.2	<46	<14.1	<60.1	<61
BH21-09	4	12-22-2021	0	—	427	<0.025	<0.098	<4.9	<9.2	<46	<14.1	<60.1	140
BH21-10	4	12-22-2021	2	—	**3,657**	<0.023	<0.094	<4.7	**150**	75	**150**	**225**	**2600**
BH21-11	4	12-22-2021	0	—	192	<0.024	<0.094	<4.7	<9.8	<49	<14.5	<63.5	<60
BH21-14	4	12-22-2021	0	—	**992**	<0.024	<0.098	<4.9	<9.4	<47	<14.3	<61.3	**710**
BH21-15	4	12-22-2021	0	—	**6,002**	<0.024	<0.096	<4.8	<9.6	<48	<14.4	<62.4	**6500**
BH21-16	4	12-22-2021	0	—	132	<0.023	<0.093	<4.7	<9.8	<49	<14.5	<63.5	<60
BH21-17	4	12-22-2021	0	—	182	<0.023	<0.093	<4.7	<9.6	<48	<14.3	<62.3	<60

"ND" Not Detected at the Reporting Limit
"-" indicates not analyzed/assessed
Bold and grey shaded indicates exceedance outside of NM OCD Closure Criteria (on-pad)
Bold and green shaded indicates exceedance outside of NM OCD Reclamation Criteria (off-pad)

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

January 07, 2022

Michael Moffitt

Vertex Resources Services, Inc.
3101 Boyd Drive
Carlsbad, NM 88220
TEL: (505) 506-0040
FAX:

RE: Redhills SWD 1 OrderNo.: 2112D85

Dear Michael Moffitt:

Hall Environmental Analysis Laboratory received 12 sample(s) on 12/28/2021 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2112D85**
Date Reported: **1/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH21-01
Project: Redhills SWD 1
Collection Date: 12/22/2021 10:00:00 AM
Lab ID: 2112D85-001 **Matrix:** SOIL **Received Date:** 12/28/2021 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	1/3/2022 1:50:09 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	1/3/2022 1:50:09 PM
Surr: DNOP	83.0	70-130		%Rec	1	1/3/2022 1:50:09 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **mb**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/29/2021 4:52:00 PM
Surr: BFB	86.3	70-130		%Rec	1	12/29/2021 4:52:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **mb**
Benzene	ND	0.023		mg/Kg	1	12/29/2021 4:52:00 PM
Toluene	ND	0.047		mg/Kg	1	12/29/2021 4:52:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	12/29/2021 4:52:00 PM
Xylenes, Total	ND	0.094		mg/Kg	1	12/29/2021 4:52:00 PM
Surr: 4-Bromofluorobenzene	78.8	70-130		%Rec	1	12/29/2021 4:52:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	160	60		mg/Kg	20	1/3/2022 6:05:31 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order **2112D85**
Date Reported: **1/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH21-03
Project: Redhills SWD 1 **Collection Date:** 12/22/2021 1:05:00 PM
Lab ID: 2112D85-002 **Matrix:** SOIL **Received Date:** 12/28/2021 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	1/3/2022 2:00:57 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	1/3/2022 2:00:57 PM
Surr: DNOP	77.9	70-130		%Rec	1	1/3/2022 2:00:57 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **mb**
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	12/29/2021 5:12:00 PM
Surr: BFB	86.9	70-130		%Rec	1	12/29/2021 5:12:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **mb**
Benzene	ND	0.023		mg/Kg	1	12/29/2021 5:12:00 PM
Toluene	ND	0.046		mg/Kg	1	12/29/2021 5:12:00 PM
Ethylbenzene	ND	0.046		mg/Kg	1	12/29/2021 5:12:00 PM
Xylenes, Total	ND	0.092		mg/Kg	1	12/29/2021 5:12:00 PM
Surr: 4-Bromofluorobenzene	80.6	70-130		%Rec	1	12/29/2021 5:12:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	390	60		mg/Kg	20	1/3/2022 3:25:02 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2112D85**
Date Reported: **1/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH21-04
Project: Redhills SWD 1 **Collection Date:** 12/22/2021 11:00:00 AM
Lab ID: 2112D85-003 **Matrix:** SOIL **Received Date:** 12/28/2021 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	810	10		mg/Kg	1	1/3/2022 2:11:47 PM
Motor Oil Range Organics (MRO)	260	50		mg/Kg	1	1/3/2022 2:11:47 PM
Surr: DNOP	91.6	70-130		%Rec	1	1/3/2022 2:11:47 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **mb**
Gasoline Range Organics (GRO)	ND	23		mg/Kg	5	12/29/2021 5:32:00 PM
Surr: BFB	113	70-130		%Rec	5	12/29/2021 5:32:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **mb**
Benzene	ND	0.11		mg/Kg	5	12/29/2021 5:32:00 PM
Toluene	ND	0.23		mg/Kg	5	12/29/2021 5:32:00 PM
Ethylbenzene	ND	0.23		mg/Kg	5	12/29/2021 5:32:00 PM
Xylenes, Total	ND	0.46		mg/Kg	5	12/29/2021 5:32:00 PM
Surr: 4-Bromofluorobenzene	89.6	70-130		%Rec	5	12/29/2021 5:32:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	220	61		mg/Kg	20	1/3/2022 3:37:23 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order **2112D85**
Date Reported: **1/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH21-05
Project: Redhills SWD 1 **Collection Date:** 12/22/2021 10:15:00 AM
Lab ID: 2112D85-004 **Matrix:** SOIL **Received Date:** 12/28/2021 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	1800	46		mg/Kg	5	1/4/2022 4:32:25 PM
Motor Oil Range Organics (MRO)	240	230		mg/Kg	5	1/4/2022 4:32:25 PM
Surr: DNOP	85.7	70-130		%Rec	5	1/4/2022 4:32:25 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **mb**
Gasoline Range Organics (GRO)	650	24		mg/Kg	5	12/29/2021 5:51:00 PM
Surr: BFB	352	70-130	S	%Rec	5	12/29/2021 5:51:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **mb**
Benzene	ND	0.12		mg/Kg	5	12/29/2021 5:51:00 PM
Toluene	ND	0.24		mg/Kg	5	12/29/2021 5:51:00 PM
Ethylbenzene	1.5	0.24		mg/Kg	5	12/29/2021 5:51:00 PM
Xylenes, Total	2.5	0.47		mg/Kg	5	12/29/2021 5:51:00 PM
Surr: 4-Bromofluorobenzene	123	70-130		%Rec	5	12/29/2021 5:51:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	59		mg/Kg	20	1/3/2022 3:49:44 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order **2112D85**
Date Reported: **1/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH21-08
Project: Redhills SWD 1 **Collection Date:** 12/22/2021 1:15:00 PM
Lab ID: 2112D85-005 **Matrix:** SOIL **Received Date:** 12/28/2021 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	1/3/2022 2:33:18 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	1/3/2022 2:33:18 PM
Surr: DNOP	89.3	70-130		%Rec	1	1/3/2022 2:33:18 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **mb**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/29/2021 6:11:00 PM
Surr: BFB	118	70-130		%Rec	1	12/29/2021 6:11:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **mb**
Benzene	ND	0.025		mg/Kg	1	12/29/2021 6:11:00 PM
Toluene	ND	0.049		mg/Kg	1	12/29/2021 6:11:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	12/29/2021 6:11:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	12/29/2021 6:11:00 PM
Surr: 4-Bromofluorobenzene	81.9	70-130		%Rec	1	12/29/2021 6:11:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	61		mg/Kg	20	1/3/2022 4:26:46 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2112D85**
Date Reported: **1/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH21-09
Project: Redhills SWD 1 **Collection Date:** 12/22/2021 11:20:00 AM
Lab ID: 2112D85-006 **Matrix:** SOIL **Received Date:** 12/28/2021 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	1/3/2022 2:44:04 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	1/3/2022 2:44:04 PM
Surr: DNOP	89.0	70-130		%Rec	1	1/3/2022 2:44:04 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **mb**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/29/2021 7:10:00 PM
Surr: BFB	91.5	70-130		%Rec	1	12/29/2021 7:10:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **mb**
Benzene	ND	0.025		mg/Kg	1	12/29/2021 7:10:00 PM
Toluene	ND	0.049		mg/Kg	1	12/29/2021 7:10:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	12/29/2021 7:10:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	12/29/2021 7:10:00 PM
Surr: 4-Bromofluorobenzene	81.1	70-130		%Rec	1	12/29/2021 7:10:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	140	60		mg/Kg	20	1/3/2022 4:39:06 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2112D85**
Date Reported: **1/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH21-10
Project: Redhills SWD 1
Collection Date: 12/22/2021 11:25:00 AM
Lab ID: 2112D85-007 **Matrix:** SOIL **Received Date:** 12/28/2021 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	150	8.7		mg/Kg	1	1/3/2022 2:54:51 PM
Motor Oil Range Organics (MRO)	75	44		mg/Kg	1	1/3/2022 2:54:51 PM
Surr: DNOP	87.3	70-130		%Rec	1	1/3/2022 2:54:51 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **mb**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/29/2021 7:30:00 PM
Surr: BFB	85.2	70-130		%Rec	1	12/29/2021 7:30:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **mb**
Benzene	ND	0.023		mg/Kg	1	12/29/2021 7:30:00 PM
Toluene	ND	0.047		mg/Kg	1	12/29/2021 7:30:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	12/29/2021 7:30:00 PM
Xylenes, Total	ND	0.094		mg/Kg	1	12/29/2021 7:30:00 PM
Surr: 4-Bromofluorobenzene	78.7	70-130		%Rec	1	12/29/2021 7:30:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	2600	150		mg/Kg	50	1/4/2022 10:23:11 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2112D85**
Date Reported: **1/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH21-11
Project: Redhills SWD 1 **Collection Date:** 12/22/2021 11:50:00 AM
Lab ID: 2112D85-008 **Matrix:** SOIL **Received Date:** 12/28/2021 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	1/3/2022 3:05:35 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	1/3/2022 3:05:35 PM
Surr: DNOP	83.8	70-130		%Rec	1	1/3/2022 3:05:35 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **mb**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/29/2021 7:49:00 PM
Surr: BFB	85.9	70-130		%Rec	1	12/29/2021 7:49:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **mb**
Benzene	ND	0.024		mg/Kg	1	12/29/2021 7:49:00 PM
Toluene	ND	0.047		mg/Kg	1	12/29/2021 7:49:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	12/29/2021 7:49:00 PM
Xylenes, Total	ND	0.094		mg/Kg	1	12/29/2021 7:49:00 PM
Surr: 4-Bromofluorobenzene	79.1	70-130		%Rec	1	12/29/2021 7:49:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	60		mg/Kg	20	1/3/2022 5:03:48 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order **2112D85**
Date Reported: **1/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH21-14
Project: Redhills SWD 1
Collection Date: 12/22/2021 12:05:00 PM
Lab ID: 2112D85-009 **Matrix:** SOIL **Received Date:** 12/28/2021 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	1/3/2022 3:16:18 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	1/3/2022 3:16:18 PM
Surr: DNOP	89.8	70-130		%Rec	1	1/3/2022 3:16:18 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **mb**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/29/2021 8:09:00 PM
Surr: BFB	87.4	70-130		%Rec	1	12/29/2021 8:09:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **mb**
Benzene	ND	0.024		mg/Kg	1	12/29/2021 8:09:00 PM
Toluene	ND	0.049		mg/Kg	1	12/29/2021 8:09:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	12/29/2021 8:09:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	12/29/2021 8:09:00 PM
Surr: 4-Bromofluorobenzene	77.6	70-130		%Rec	1	12/29/2021 8:09:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	710	60		mg/Kg	20	1/3/2022 5:16:08 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order **2112D85**
Date Reported: **1/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH21-15
Project: Redhills SWD 1 **Collection Date:** 12/22/2021 1:10:00 PM
Lab ID: 2112D85-010 **Matrix:** SOIL **Received Date:** 12/28/2021 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	1/3/2022 3:27:00 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	1/3/2022 3:27:00 PM
Surr: DNOP	106	70-130		%Rec	1	1/3/2022 3:27:00 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **mb**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/29/2021 8:29:00 PM
Surr: BFB	88.0	70-130		%Rec	1	12/29/2021 8:29:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **mb**
Benzene	ND	0.024		mg/Kg	1	12/29/2021 8:29:00 PM
Toluene	ND	0.048		mg/Kg	1	12/29/2021 8:29:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	12/29/2021 8:29:00 PM
Xylenes, Total	ND	0.096		mg/Kg	1	12/29/2021 8:29:00 PM
Surr: 4-Bromofluorobenzene	80.3	70-130		%Rec	1	12/29/2021 8:29:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	6500	300		mg/Kg	100	1/4/2022 10:35:31 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order **2112D85**
Date Reported: **1/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH21-16
Project: Redhills SWD 1 **Collection Date:** 12/22/2021 1:15:00 PM
Lab ID: 2112D85-011 **Matrix:** SOIL **Received Date:** 12/28/2021 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	12/30/2021 11:49:56 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	12/30/2021 11:49:56 AM
Surr: DNOP	81.3	70-130		%Rec	1	12/30/2021 11:49:56 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **mb**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/29/2021 9:47:00 PM
Surr: BFB	84.9	70-130		%Rec	1	12/29/2021 9:47:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **mb**
Benzene	ND	0.023		mg/Kg	1	12/29/2021 9:47:00 PM
Toluene	ND	0.047		mg/Kg	1	12/29/2021 9:47:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	12/29/2021 9:47:00 PM
Xylenes, Total	ND	0.093		mg/Kg	1	12/29/2021 9:47:00 PM
Surr: 4-Bromofluorobenzene	79.2	70-130		%Rec	1	12/29/2021 9:47:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	60		mg/Kg	20	1/3/2022 5:40:49 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report
Lab Order **2112D85**
Date Reported: **1/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH21-17
Project: Redhills SWD 1 **Collection Date:** 12/22/2021 1:20:00 PM
Lab ID: 2112D85-012 **Matrix:** SOIL **Received Date:** 12/28/2021 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	12/30/2021 12:21:49 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	12/30/2021 12:21:49 PM
Surr: DNOP	78.1	70-130		%Rec	1	12/30/2021 12:21:49 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **mb**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/29/2021 10:46:00 PM
Surr: BFB	84.0	70-130		%Rec	1	12/29/2021 10:46:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **mb**
Benzene	ND	0.023		mg/Kg	1	12/29/2021 10:46:00 PM
Toluene	ND	0.047		mg/Kg	1	12/29/2021 10:46:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	12/29/2021 10:46:00 PM
Xylenes, Total	ND	0.093		mg/Kg	1	12/29/2021 10:46:00 PM
Surr: 4-Bromofluorobenzene	78.0	70-130		%Rec	1	12/29/2021 10:46:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	60		mg/Kg	20	1/3/2022 5:53:10 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112D85**
07-Jan-22

Client: Vertex Resources Services, Inc.
Project: Redhills SWD 1

Sample ID: **MB-64817**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **64817**	RunNo: **84901**							
Prep Date: **1/3/2022**	Analysis Date: **1/3/2022**	SeqNo: **2987245**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-64817**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **64817**	RunNo: **84901**							
Prep Date: **1/3/2022**	Analysis Date: **1/3/2022**	SeqNo: **2987246**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	98.7	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112D85**
07-Jan-22

Client: Vertex Resources Services, Inc.
Project: Redhills SWD 1

Sample ID: **2112D85-011AMS** SampType: **MS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BH21-16** Batch ID: **64781** RunNo: **84875**
Prep Date: **12/29/2021** Analysis Date: **12/30/2021** SeqNo: **2985746** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	45	8.9	44.60	0	101	39.3	155			
Surr: DNOP	3.4		4.460		75.4	70	130			

Sample ID: **2112D85-011AMSD** SampType: **MSD** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BH21-16** Batch ID: **64781** RunNo: **84875**
Prep Date: **12/29/2021** Analysis Date: **12/30/2021** SeqNo: **2985747** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	42	10	49.90	0	83.8	39.3	155	7.48	23.4	
Surr: DNOP	4.0		4.990		80.4	70	130	0	0	

Sample ID: **LCS-64781** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **64781** RunNo: **84875**
Prep Date: **12/29/2021** Analysis Date: **12/30/2021** SeqNo: **2985761** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	42	10	50.00	0	84.6	68.9	135			
Surr: DNOP	4.1		5.000		82.4	70	130			

Sample ID: **MB-64781** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **64781** RunNo: **84875**
Prep Date: **12/29/2021** Analysis Date: **12/30/2021** SeqNo: **2985763** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.9		10.00		88.8	70	130			

Sample ID: **LCS-64780** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **64780** RunNo: **84903**
Prep Date: **12/30/2021** Analysis Date: **1/3/2022** SeqNo: **2986775** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	42	10	50.00	0	83.3	68.9	135			
Surr: DNOP	4.1		5.000		82.2	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112D85**
07-Jan-22

Client: Vertex Resources Services, Inc.
Project: Redhills SWD 1

Sample ID: **MB-64780**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **64780**	RunNo: **84903**
Prep Date: **12/30/2021**	Analysis Date: **1/3/2022**	SeqNo: **2986777** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.6		10.00		86.1	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112D85**
07-Jan-22

Client: Vertex Resources Services, Inc.
Project: Redhills SWD 1

Sample ID: **mb-64756**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **64756**	RunNo: **84840**
Prep Date: **12/28/2021**	Analysis Date: **12/29/2021**	SeqNo: **2984350** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	860		1000		86.1	70	130			

Sample ID: **lcs-64756**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **64756**	RunNo: **84840**
Prep Date: **12/28/2021**	Analysis Date: **12/29/2021**	SeqNo: **2984351** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	5.0	25.00	0	103	78.6	131			
Surr: BFB	1100		1000		106	70	130			

Sample ID: **mb-64758**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **64758**	RunNo: **84840**
Prep Date: **12/28/2021**	Analysis Date: **12/29/2021**	SeqNo: **2984707** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	810		1000		81.4	70	130			

Sample ID: **lcs-64758**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **64758**	RunNo: **84840**
Prep Date: **12/28/2021**	Analysis Date: **12/29/2021**	SeqNo: **2984708** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	97.5	78.6	131			
Surr: BFB	960		1000		95.6	70	130			

Sample ID: **2112D85-011ams**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BH21-16**	Batch ID: **64758**	RunNo: **84840**
Prep Date: **12/28/2021**	Analysis Date: **12/29/2021**	SeqNo: **2984710** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	20	4.6	23.00	0	85.0	61.3	114			
Surr: BFB	940		920.0		103	70	130			

Sample ID: **2112D85-011amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BH21-16**	Batch ID: **64758**	RunNo: **84840**
Prep Date: **12/28/2021**	Analysis Date: **12/29/2021**	SeqNo: **2984712** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112D85**
07-Jan-22

Client: Vertex Resources Services, Inc.
Project: Redhills SWD 1

Sample ID: **2112D85-011amsd** SampType: **MSD** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BH21-16** Batch ID: **64758** RunNo: **84840**
Prep Date: **12/28/2021** Analysis Date: **12/29/2021** SeqNo: **2984712** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	18	4.8	24.02	0	74.9	61.3	114	8.39	20	
Surr: BFB	930		960.6		96.3	70	130	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112D85**
07-Jan-22

Client: Vertex Resources Services, Inc.
Project: Redhills SWD 1

Sample ID: **mb-64756** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS** Batch ID: **64756** RunNo: **84840**
Prep Date: **12/28/2021** Analysis Date: **12/29/2021** SeqNo: **2984364** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.79		1.000		78.5	70	130			

Sample ID: **lcs-64756** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS** Batch ID: **64756** RunNo: **84840**
Prep Date: **12/28/2021** Analysis Date: **12/29/2021** SeqNo: **2984365** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.87	0.025	1.000	0	87.5	80	120			
Toluene	0.86	0.050	1.000	0	86.2	80	120			
Ethylbenzene	0.87	0.050	1.000	0	86.7	80	120			
Xylenes, Total	2.5	0.10	3.000	0	84.8	80	120			
Surr: 4-Bromofluorobenzene	0.80		1.000		80.4	70	130			

Sample ID: **mb-64758** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS** Batch ID: **64758** RunNo: **84840**
Prep Date: **12/28/2021** Analysis Date: **12/29/2021** SeqNo: **2984742** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.77		1.000		77.5	70	130			

Sample ID: **lcs-64758** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS** Batch ID: **64758** RunNo: **84840**
Prep Date: **12/28/2021** Analysis Date: **12/29/2021** SeqNo: **2984743** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.88	0.025	1.000	0	88.4	80	120			
Toluene	0.87	0.050	1.000	0	86.9	80	120			
Ethylbenzene	0.87	0.050	1.000	0	87.0	80	120			
Xylenes, Total	2.6	0.10	3.000	0	85.2	80	120			
Surr: 4-Bromofluorobenzene	0.80		1.000		79.6	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2112D85**
07-Jan-22

Client: Vertex Resources Services, Inc.
Project: Redhills SWD 1

Sample ID: **2112D85-012ams**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BH21-17**	Batch ID: **64758**	RunNo: **84854**
Prep Date: **12/28/2021**	Analysis Date: **12/30/2021**	SeqNo: **2985924** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.76	0.024	0.9625	0	79.2	80	120			S
Toluene	0.75	0.048	0.9625	0	77.9	80	120			S
Ethylbenzene	0.74	0.048	0.9625	0	77.4	80	120			S
Xylenes, Total	2.2	0.096	2.887	0	75.9	80	120			S
Surr: 4-Bromofluorobenzene	0.74		0.9625		76.8	70	130			

Sample ID: **2112D85-012amsd**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BH21-17**	Batch ID: **64758**	RunNo: **84854**
Prep Date: **12/28/2021**	Analysis Date: **12/30/2021**	SeqNo: **2985926** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.79	0.024	0.9756	0	80.8	80	120	3.45	20	
Toluene	0.78	0.049	0.9756	0	79.7	80	120	3.64	20	S
Ethylbenzene	0.78	0.049	0.9756	0	80.2	80	120	4.92	20	
Xylenes, Total	2.3	0.098	2.927	0	78.3	80	120	4.48	20	S
Surr: 4-Bromofluorobenzene	0.79		0.9756		80.8	70	130	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

Sample Log-In Check List

Client Name: Vertex Resources Services, Inc.

Work Order Number: 2112D85

RcptNo: 1

Received By: Tracy Casarrubias 12/28/2021 7:50:00 AM

Completed By: Tracy Casarrubias 12/28/2021 8:20:31 AM

Reviewed By: 12/28/21

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Courier		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☐	No ☐	NA ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: (<2 or >12 unless noted)

Adjusted?

Checked by: JR 12/28/21

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:

By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.1	Good	Yes			

Chain-of-Custody Record

Client: Vertex

Mailing Address: on file

Phone #:

email or Fax#:

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time: 5 day
☒ Standard ☐ Rush

Project Name: Bedhills SWD #1

Project #: 21E-00797

Project Manager: Michael Moffitt

Sampler:

On Ice: ☒ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): 3.2-0.1=3.1 (°C)

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2112D85	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
12/22	10:00	Soil	BH21-01	4oz	ice	001	X	X					X			
	1:05		BH21-03			002										
	11:00		BH21-04			003										
	10:15		BH21-05			004										
	1:15		BH21-08			005										
	11:20		BH21-09			006										
	11:25		BH21-10			007										
	11:50		BH21-11			008										
	12:05		BH21-14			009										
	1:10		BH21-15			010										
	1:15		BH21-16			011										
	1:20		BH21-17			012										

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
			[signature]		12/27/21	1730
Date: 12/27/21	Time: 1900	Relinquished by: [signature]	Received by: [signature]	Via: Courier	Date: 12/28/21	Time: 7:50

Remarks: CC: Michael Moffitt

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

ATTACHMENT 4

Daily Site Visit Report

Client:	Cimarex Energy Company of Colorado	Inspection Date:	2/10/2022
Site Location Name:	Red Hills Unit 1 SWD	Report Run Date:	2/28/2022 4:17 PM
Client Contact Name:	Kyle Blevins	API #:	
Client Contact Phone #:	(575)441-6781		
Unique Project ID		Project Owner:	
Project Reference #		Project Manager:	

Summary of Times

Arrived at Site	2/10/2022 9:00 AM
Departed Site	2/10/2022 11:00 AM

Field Notes

9:10 Arrived on site and met up with Laci Luig from cimarex and no Scarborough drilling to drill for a GW bore.

9:14 Signed Cimarex JSA

Next Steps & Recommendations

1 Digitize the drilling log and come back within 72 hours to see if a bailer pulls up water. Borehole was drilled to 55 feet.

Daily Site Visit Report

Site Photos

Viewing Direction: North	**Viewing Direction**: West
	
Borehole Location	30' depth
Viewing Direction: West	**Viewing Direction**: West
	
PVC Installation	35' depth

Daily Site Visit Report

Viewing Direction: West	**Viewing Direction**: West
	
45' depth	50' depth
Viewing Direction: West	**Viewing Direction**: North
	
PVC casing installation	Top 30' and goes down in 5' increments to 50'

Daily Site Visit Report

Daily Site Visit Signature

Inspector: Mike Moffitt

Signature: 
Signature

Daily Site Visit Report

Client:	Cimarex Energy Company of Colorado	Inspection Date:	2/15/2022
Site Location Name:	Red Hills Unit 1 SWD	Report Run Date:	2/28/2022 3:56 PM
Client Contact Name:	Kyle Blevins	API #:	
Client Contact Phone #:	(575)441-6781		
Unique Project ID		Project Owner:	
Project Reference #		Project Manager:	

Summary of Times

Arrived at Site	2/15/2022 11:30 AM
Departed Site	2/15/2022 11:52 AM

Field Notes

11:42 Arrived on site to put a bailer down the borehole to see if water moves through the screen and collected at depth.

11:43 Tied off the bailer with rope and a slip note around my hand for 65 feet worth of depth. this was to account for the 2 inch casing above ground.

11:44 Sent the bailer down hole from on top of my truck bed.

11:45 Moisture was felt on the hand line while pulling the bailer up. This was likely due to humidity within the casing and having been left to sit for over 72 hours plus.

11:46 Pulled the bailer up and only moisture but no water was found to be present.

11:49 Total depth of the well was measured with a tape and weight to be 55 feet BGS and 61 feet total. The additional footage was from the 6ft of PVC casing located above the hole. The driller did this to make the Borehole location known to the workers on the pad.

Next Steps & Recommendations

1 Water was not present at the bottom of the borehole as evidenced by the results of trying to bail the well. This location is ready for P & A. No further testing will be required. GW is not present at 55' feet BGS.

Daily Site Visit Report

Site Photos

Viewing Direction: North	**Viewing Direction**: East
	
Location of Borehole and PVC casing above ground.	Bailer post DTGW test.

Daily Site Visit Report

Daily Site Visit Signature

Inspector: Mike Moffitt

Signature: 
Signature

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 90834

CONDITIONS

Operator: CIMAREX ENERGY CO. OF COLORADO 600 N. Marienfeld Street Midland, TX 79701	OGRID: 162683
	Action Number: 90834
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
jnobui	Remediation Plan Approved with Conditions. Please excavate past 4' at location BH21-05 to complete vertical delineation and removal. Going forward, please include a site plan showing extent of excavation. Approval applies to nTO1501548835.	5/9/2022